Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for

Westport Family Medicine

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

PWS Name	Westport Family Medicine
PWS Address	829 Main Road
City/Town	Westport
PWS ID Number	4334083
Local Contact	Ann Cabral
Phone Number	(508) 636-5101

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate Best Management Practices (BMPs) and drinking water source protection measures.

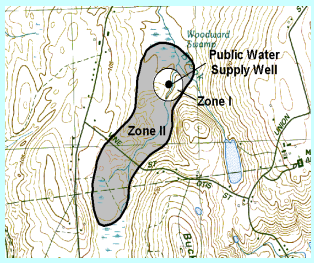
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Discussion of Land Uses within the Protection Areas
3. Protection Recommendations
4. Appendices

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II protection area.



Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

Section 1: Description of the Water System

IWPA ***Susceptibility:*** High

Well Names	***Source IDs***
Well No. 1	4334083-01G

1. Description of the Water System

The well for Westport Family Medicine Center is located west of Main Road. Well No. 1 has a Zone I radius of 100 feet and an Interim Wellhead Protection Area (IWPA) radius of 422 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The well serving the facility has no treatment at this time. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses within the Protection Areas

There are land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:
1. **Inappropriate Activities in Zone I;**
2. **Residential Land Uses;**
3. **Gasoline/Service Stations;**
4. **Underground Storage Tanks**
5. **Oil or Hazardous Material Contamination Sites**
6. **Landscaping**

The overall ranking of susceptibility to contamination for the wells is high, based on the presence of at least one moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Inappropriate Activities in Zone I –** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains a portion of the facility building, a private home, parking areas, a road, and landscaped areas. The public water supplier does not own and/or control all land encompassed by the Zone I. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:

✓ Remove all non-water supply activities from the Zone I to comply with

DEP's Zone I requirements.

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Redirect road and parking lot drainage in the Zone I away from well.

2. **Residential Land Uses –**All of the residences have on-site septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- ✓ **Septic Systems** - Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained, they can be a potential source of microbial contamination.
- ✓ **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- ✓ **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.

- ✓ **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

3. **Gasoline/Service Stations –** Gasoline stations typically have USTs for storage of the gasoline. Spills associated with tank fueling operations, vehicle overfills and leaking USTS are potential sources of groundwater contamination. See Appendix A for more information regarding gasoline/service stations located within the IWPA.

Recommendations:

- ✓ Encourage businesses to use BMP's for the storage, handling, and disposal of all hazardous chemicals, oils and waste oils.

- ✓ If these facilities have floor drains, ensure that the floor drains lead to a tight tank or municipal sewer as required by the plumbing code and Underground Injection Control Regulations, 310 CMR 27.00.

4. Medical Facilities – Medical facilities generate biological waste; use chemicals and generate chemical waste; and, may use radioactive material and generate low-level radioactive waste. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be disposed of to a septic system or floor drain leading directly to the ground.

Medical Facilities Recommendations:

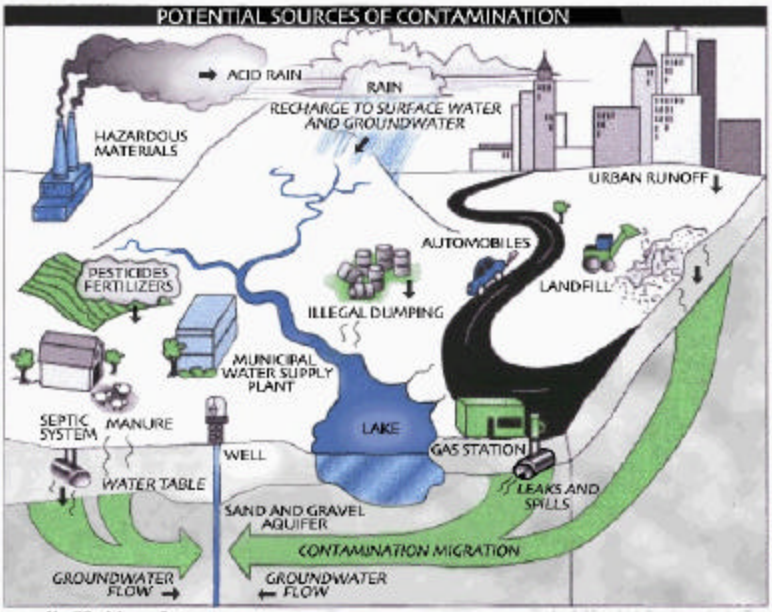
- ✓ Make certain that BMPs are in place for the storage, handling, and disposal of

Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.



biological, chemical, and radioactive waste.

✓ Review Massachusetts floordrain requirements. See brochure "Industrial Floor Drains" for more information.

5. Oil or Hazardous Material Contamination Sites – The IWPA contains or abuts two DEP Tier Classified Hazardous Material Release Site indicated on the map as Release Tracking Numbers 4-0013684 and 4-0013584. Refer to the attached map and Appendix B for more information.

Oil or Hazardous Material Contamination Sites Recommendation:

✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.

6. Landscaping - Pesticides and fertilizers have the potential to contaminate a drinking water source if improperly stored, applied, or disposed.

Recommendation:

✓ Encourage businesses to use BMP's for the storage, handling, and use of all pesticides, herbicides, and fertilizers.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

What are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

For More Information

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Westport Family Medicine Center is commended for having a formal Emergency Response Plan in place to deal with spills or other emergencies. Source protection recommendations are listed in Table 3, the Key Issues above and Appendix C. Westport Family Medicine Center should review and adopt the key recommendations above and the following:

Priority Recommendations:

✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

✓ Redirect road and parking lot drainage in the Zone I away from well.

Zone I:

✓ Conduct regular inspections of the Zone I.

✓ If Westport Family Medicine Center intends to continue utilizing the structures in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

✓ Frequently sweep and properly dispose of debris buildup on the parking lot and driveway.

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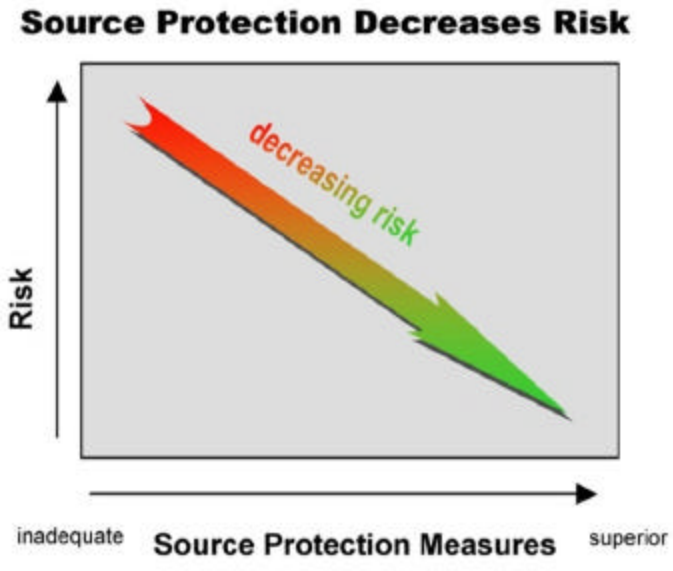

Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Protection Areas (Zone I and IWPA)

For more information, refer to Appendix A: Regulated Facilities within the Water Supply Protection Area

Activities	Quantity	Threat*	Potential Source of Contamination
Agricultural			
Landscaping	Numerous	Moderate	Fertilizers and pesticides: leaks, spills, improper handling, or over-application
Commercial			
Gas Stations/ Service Stations	2	High	Automotive fluids and fuels: spills, leaks, or improper handling or storage
Medical Facility	1	Moderate	Biological, chemical, and radioactive wastes: spills, leaks, or improper handling or storage
Residential			
Fuel Oil Storage	Numerous	Moderate	Proper maintenance and upgrades to fuel oil tanks to prevent releases from occurring
Lawn Care / Gardening	Numerous	M	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous			
Underground Storage Tanks	2 known	High	Spills, leaks, or improper handling
Small quantity hazardous waste generators	2	M	Hazardous materials and waste: spills, leaks, or improper handling or storage
Oil or Hazardous Material Sites	2	--	Tier Classified Oil or Hazardous Materials Sites are not ranked due to their site-specific character. Individual sites are identified in Appendix B.
Roads, Driveways and Parking Lots	Numerous	Moderate	Limit road salt usage and provide drainage away from wells

Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix A: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix B: Tier Classified Oil and/or Hazardous Material Sites.

*** THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

✓ Consider well relocation if Zone I threats cannot be mitigated.

Training and Education:

✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include medical staff, custodial staff, and groundskeepers. Post labels as appropriate on raw materials and hazardous waste.
✓ Post drinking water protection area signs at key visibility locations.
✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, refer to http://www.state.ma.us/dep/bwp/dhm/files/sqgsum.pdf for the Requirements for Small Quantity Generators.
✓ Floor drains in areas where hazardous materials or wastes might reach them need to drain to a tight tank, be sealed, or be connected to a sanitary sewer.
✓ Upgrade all oil storage tanks to incorporate proper containment and safety practices.
✓ Implement BMPs to ensure the proper handling and storage of hazardous materials.
✓ Implement BMPs for the use of fertilizer, herbicides and pesticides on the property.
✓ Septic system components should be located, inspected, and maintained on a regular basis.
✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.
✓ The facility is currently not registered as a generator of hazardous waste or waste oil. Review enclosed document "A Summary of Requirements for Small Quantity Generators of Hazardous Waste" to determine your status and regulatory requirements.

Top 5 Reasons to Develop a Local Wellhead Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased groundwater monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Planning:

✓ Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I?	**NO**	If it is not feasible to purchase the Zone I, consider a conservation restriction to prohibit potentially threatening activities and/or a right of first refusal to purchase.
Is the Zone I posted with "Public Drinking Water Supply" Signs?	**NO**	Economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is Zone I regularly inspected?	**NO**	Daily inspections should be conducted in the Zone I.
Are water supply-related activities the only activities within the Zone I?	**NO**	Work toward the removal of all non-water supply activities from the Zone I.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21(2)?	**YES**	The Town "Aquifer Protection District" bylaw meets DEP's requirements for wellhead protection. Work with the Town to incorporate the IWPA within the Aquifer Protection District.
Do neighboring communities protect the Zone II areas extending into their communities?	**YES**	
Planning		
Does the PWS have a Wellhead Protection Plan?	**NO**	Develop a wellhead protection plan. Follow "Developing a Local Wellhead Protection Plan" available at: www.state.ma.us/dep/brp/dws/.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**YES**	Augment plan by developing a joint emergency response plan with fire department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a wellhead protection committee?	**NO**	
Does the Board of Health conduct inspections of commercial and industrial activities?	**NO**	For guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc
Does the PWS provide wellhead protection education?	**NO**	Notify town, commercial, and residential land users that they are within a drinking water protection area. Educate businesses on the use of BMPs to reduce contamination threats to the drinking water supply.

the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Appendices

A. Regulated Facilities within the Water Supply Protection Area
B. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas
C. Additional Documents on Source Protection

What is a Zone III?

A Zone III (the secondary recharge area) is the land beyond the Zone II from which surface and ground water drain to the Zone II and is often coincident with a watershed boundary.

The Zone III is defined as a secondary recharge area for one or both of the following reasons:

1. The low permeability of underground water bearing materials in this area significantly reduces the rate of groundwater and potential contaminant flow into the Zone II.
2. The groundwater in this area discharges to a surface water feature such as a river, rather than discharging directly into the aquifer.

The land uses within the Zone III are assessed only for sources that are shown to be groundwater under the direct influence of surface water.

Additional Documents:

To help with source protection efforts, more information is available by request or online at mass.gov/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

APPENDIX A: REGULATED FACILITIES WITHIN THE WATER SUPPLY PROTECTION AREAS

DEP Permitted Facilities:

DEP Facility Number	Facility Name	Street Address	Town	Permitted Activity	Activity Class
6842	Westport Highway Department	816 Main Road	Westport	Fuel Dispenser	Fuel Dispenser
131398	Westport Highway Department	820 Main Road	Westport	Generator of Hazardous Waste and Waste Oil	Small Quantity Generator

DEP Permitted Facilities:

Underground Storage Tanks:

Facility Name	Address	Town	Tank Material	Tank Type	Tank Leak Detection	Capacity (gal)	Contents
Cumberland Farms #3917	809 Main Road	Westport	reinforced fiberglass	double wall	interstitial monitoring	10,000	gasoline
			reinforced fiberglass	double wall	interstitial monitoring	10,000	gasoline

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: http://www.state.ma.us/dfs/ust/ustHome.htm

Notes: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities may be located within the water supply protection area(s) that should be considered in local drinking water source protection planning.

Appendix B: Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://www.state.ma.us/dep/bwsc/sitelist.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
4-0013684	CUMBERLAND FARMS STORE #2028	WESTPORT	OIL
4-0013584	OLD WESTPORT TOWN GARAGE	WESTPORT	OIL

Cumberland Farms Store is located north of the facility, Old Westport Town Garage is located northeast of the facility.